

## ABSTRACTS OF CARDIOLOGY

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**The Effects of Peripheral Arterial Embolism.** R. L. RICHARDS. *Quart. J. Med.*, 23, 73-90, Jan., 1954. 2 figs., 35 refs.

This review of the effect of embolism of the peripheral arteries is based on a survey of the literature and on personal observation in 52 cases (56 episodes of peripheral arterial embolism). Of the 52 patients, 15 recovered completely and 20 died; the remaining 17 had post-embolic ischaemia. Treatment included embolectomy in 19 cases and amputation of a limb in 4; the remaining cases were treated conservatively. The author states that he has seen only 4 cases "in which, without embolectomy, recovery of function in the limb was complete within 72 hours of the occurrence of the first symptom," the upper limb being affected in all four cases.

As regards the clinical features, a sudden transient pain may be felt in the limb at the site of the embolism. This pain arises from stimulation of the nerve endings in the arterial wall, the stimulus being associated with distension rather than spasm. The principal pain is due to ischaemia of the tissues; it develops gradually and is maximal on the distal side of the occlusion. Either numbness or coldness of the limb precedes pain in approximately one-third of all cases. The degree of paralysis varies considerably. The late effects of paralysis are often troublesome and are occasionally followed by permanent disability.

It is concluded that medical treatment should be instituted if the patient is seen within 8 hours of the onset of symptoms. Embolectomy is advised, however, if no improvement is observed after 2 to 3 hours.

*A. Garland*

**Clinical Appraisal of Intra-arterial Priscoline Therapy in the Management of Peripheral Arterial Diseases.** A. G. PRANDONI and M. MOSER. *Circulation (N.Y.)*, 9, 73-81, Jan., 1954.

The intra-arterial use of vasodilators might be expected to avoid some of the undesirable systemic effects of intravenous autonomic blocking agents. The injection into the femoral, radial, or brachial artery of "priscoline" (benzazoline; 2-benzyl-4:5 imidazoline hydrochloride), which has an adrenergic blocking and direct vasodilator action and is neither necrotizing to tissue nor irritant to the vascular endothelium, was therefore tried by the authors in the treatment of 250 patients with peripheral vascular disease.

The results were fairly satisfactory. Of 7 cases of

Raynaud's disease improvement with healing of ulcers in 5 resulted, even when previous sympathectomy had been unsuccessful. In the treatment of 65 patients with arteriosclerosis obliterans the best results were obtained in those with ischaemic rest pain, but increased exercise tolerance was obtained in only a few. Skin temperature was raised in all but 21 cases, while in 9 cases a fall was observed. Of a group consisting of 50 men and one woman with thrombo-angiitis obliterans, all had previously received various forms of treatment, including benzazoline by mouth, without success. Gangrene was present in 26 cases. Of the 51 patients, 14 obtained complete and 10 partial relief, improvement being greater in those who had given up smoking. Only 3 in the whole group required subsequent amputation. Exercise tolerance, however, was but rarely increased.

The authors conclude that although hexamethonium and "dibenzyl" frequently give better results, benzazoline by intra-arterial injection has a place where a possible reduction in blood pressure is undesirable, but that "uniformly good results should not be expected."

*F. Starer*

**Problems in the Diagnosis and Surgical Treatment of Pulmonic Stenosis with Intact Ventricular Septum.**

J. W. KIRKLIN, D. C. CONNOLLY, F. H. ELLIS, H. B. BURCHELL, J. E. EDWARDS, and E. H. WOOD. *Circulation (N.Y.)*, 8, 849-863, Dec., 1953.

The authors discuss the pathological anatomy of the pulmonary outflow tract in cases of pulmonary stenosis without interventricular septal defect and describe the results of operation in 12 cases. There was marked hypertrophy of the muscle of the right ventricle which, in 4 of the 6 hearts examined, was sufficient to cause significant narrowing of the outflow tract.

It was found that although the right ventricular pressure fell sharply after dilatation, it might not reach a normal level for some months. The pressure fell most markedly in cases of pure valvular stenosis, but also fell considerably where a combined stenosis was encountered. It is suggested that a continued fall in pressure after valvotomy in the presence of infundibular stenosis may well be due to diminution in the hypertrophy of the right ventricular muscle, which is, at least in part, responsible for the infundibular stenosis.

The authors operate on asymptomatic patients only when the right ventricular pressure exceeds 75 mm. Hg. Of the 12 patients, 2 died as a result of the operation.

*J. R. Belcher*

**Myocardial Infarction and its Treatment with Anti-coagulants. Summary of Findings in 1,031 Cases.** I. S. WRIGHT, D. F. BECK, and C. D. MARPLE. *Lancet*, 1, 92-95, Jan. 9, 1954.

In 1946 the American Heart Association set up a committee to determine the value of anticoagulants in the treatment of myocardial infarction, a preliminary report, based on the first 800 cases, being published in 1948 (*Amer. Heart J.* 36, 801). In the present paper the authors summarize the findings in a total of 1031 cases treated at 16 different centres in the U.S. over a period of 2 years.

Dicoumarol was given to 589 patients and the results of this treatment were compared with those obtained in 442 patients receiving "conventional" therapy only. The more important findings were as follows. Of the 442 patients in the control group 23% died within 6 weeks compared with 16% of the treated group. During the period of effective anticoagulant therapy—that is, from the fourth day of treatment to 4 days after the last dose of dicoumarol—9.5% of the treated patients died, whereas 17% of the untreated patients died during the corresponding period. During a 6-week observation period thrombo-embolic complications developed in 26% of the control group but in only 11% of the treated group. It is concluded that to confine anticoagulant therapy in myocardial infarction to the more seriously ill patients is not justified.

Bernard Isaacs

**Respiratory and Circulatory Studies of Patients with Mitral Stenosis.** P. C. CURTI, G. COHEN, B. CASTLEMAN, J. G. SCANNELL, A. L. FRIEDLICH, and G. S. MYERS. *Circulation (N.Y.)*, 8, 893-904, Dec., 1953.

At the Massachusetts General Hospital, 16 patients with mitral stenosis were investigated before operation by means of cardiac catheterization and ventilatory and respiratory tests. The patients deemed to have the most severe mitral stenosis were found to have the highest pulmonary arterial resistance and the lowest resting cardiac output. Most of the patients showed a reduced vital capacity and a decreased maximum breathing capacity. The oxygen diffusing capacity was reduced in proportion to the severity of the disease and this finding was corroborated by lung biopsy, which showed thickening and fibrosis of the alveolar walls, a condition likely to hinder adequate oxygen diffusion. The degree of the pulmonary arterial and arteriolar changes found in lung-biopsy specimens, however, was not correlated with the calculated pulmonary arteriolar resistances.

James W. Brown

**Tricuspid Insufficiency. Observations Based on Angiocardigraphy and Cardiac Catheterization in Twelve Patients.** C. T. DOTTER, D. S. LUKAS, and I. STEINBERG. *Amer. J. Roentgenol.*, 70, 786-792, Nov., 1953.

Angiocardigraphy and cardiac catheterization were carried out in 12 cases of tricuspid insufficiency and in this paper the findings are discussed. All the patients had chronic rheumatic mitral stenosis and auricular fibrillation.

Cardiac catheterization is the most accurate diagnostic method, the diagnosis being established by this means

in all 12 cases. A significant feature of the pressure curve was a high plateau in tracings from the right atrium.

The authors do not consider that the presence of tricuspid insufficiency contraindicates operation on the mitral valve.

Sydney J. Hinds

**Surgical Closure of Atrial Septal Defects.** R. E. GROSS and E. WATKINS. *Arch. Surg. (Chicago)*, 67, 670-685, Nov., 1953.

The authors, writing from Harvard Medical School, review the various surgical techniques now employed in the treatment of atrial septal defects. They state that in principle these fall into four main groups. (1) Repair under direct vision, employing some form of artificial circulation or refrigeration and temporary arrest of the circulation. (2) Suture of the auricular wall itself to the margin of the defect. (3) "Blind" suture of the anterior edge of the defect to the posterior auricular wall. (4) Suture of some inert material such as polyethylene directly to the edges of the defect, using the principle of the atrial wall as described by the authors (*New Engl. J. Med.*, 1952, 247, 455).

In the authors' experience Method 3 is ideal for high posterior and small defects and Method 4 is the best for larger and anterior lesions, but as yet no completely adequate method has been devised to deal with the large, low, anterior defects which have no edges and which abut on the tricuspid valve. They mention the not uncommon association of anomalous pulmonary venous drainage with atrial septal defects, and stress the importance of the correction of this lesion. Of 12 of the authors' patients treated by Methods 3 and 4, 5 died as a result of the operation, but all 7 survivors had considerable subjective improvement and 3 out of 4 of these who were examined by cardiac catheterization after operation showed no evidence of any interatrial shunt.

J. R. Belcher

**Aortic Stenosis. Diagnosis and Treatment.** A. LOGAN and R. TURNER. *Lancet*, 1, 1091-1095, May 29, 1954.

In reporting 9 cases of aortic stenosis treated by aortic valvotomy at the Western General Hospital, Edinburgh, the authors review the symptoms and clinical signs of the disease. They suggest that the diagnosis in such cases is often missed because even severe stenosis may exist in the absence of some of the classic signs.

The operation consisted in dilatation of the aortic valve, approached by the ventricular route, by means of a mechanical dilator similar in type to the Brock pulmonary dilator but larger in size, the blades being 10 cm. long and the maximum spread 4 cm. Of the 9 patients operated on, 4 had associated mitral disease, and in these the two valvotomies were performed at the same thoracotomy, the aortic valve being dealt with before the mitral valve.

Only one of the 9 patients died as a result of the operation, the condition of all the rest being improved.

J. R. Belcher

**Assisted Circulation by Pump-oxygenator during Operative Dilatation of the Aortic Valve in Man.** I. AIRD, D. G.

MELROSE, W. P. CLELAND, and R. B. LYNN. *Brit. med. J.*, 1, 1284-1287, June 5, 1954.

The authors briefly discuss the clinical application of extracorporeal circulation by means of an artificial heart-lung machine. One of the main risks of cardiac surgery is the danger of inadequate coronary flow, which may result in the development of ventricular fibrillation. An apparatus, consisting essentially of a pump-oxygenator, has been devised and described by Melrose *et al.* (*Brit. med. J.*, 1953, 2, 57) whereby the circulation may be assisted and which may therefore prevent the onset of fibrillation by maintaining an efficient coronary circulation.

In the present paper a full description is given of a case of mitral incompetence with aortic stenosis in which this apparatus was used and double cardiectomy successfully performed. Blood was removed from the inferior vena cava by a catheter inserted in the saphenous vein, passed through the machine, and then returned to the aorta by way of a catheter in the superficial femoral artery. The operation lasted for some 2½ hours, during which the patient lost 6 pints (3.4 litres) of blood, for which a transfusion of 7½ pints (4.3 litres) was given. The flow of blood in the machine varied from 500 to 800 ml. per minute, and it was estimated that in all some 70 litres of blood passed through the pump-oxygenator, or about 30 per cent of the total cardiac output. Recovery was uneventful apart from some cyanosis, which passed off within 4 hours, and thrombophlebitis of the catheterized saphenous vein, and the patient's condition has been greatly ameliorated.

J. R. Belcher

**The Role of Intimal Hæmorrhage in Coronary Occlusion.**

R. A. B. DRURY. *J. Path. Bact.*, 67, 207-215, Jan., 1954.

In this study 55 hearts from subjects dying from coronary arterial disease were examined, together with a control group. Intimal hæmorrhage was frequently found in the coronary arteries, and nearly always resulted from hæmorrhage into an atheromatous plaque, the overlying endothelium of which had given way. Thrombosis was also found to be associated with rupture of the endothelium over an atheromatous plaque, but was not related to intimal hæmorrhage. No evidence was found to support Wartman's view that massive intimal hæmorrhage may sometimes cause sudden coronary arterial occlusion. The author believes that although intimal hæmorrhage is a common finding in cases of coronary thrombosis, it is one of little importance and should in no way be regarded as a contraindication to anticoagulant therapy.

G. J. Cunningham

**The Treatment of Shock Associated with Myocardial Infarction.**

G. C. GRIFFITH, W. B. WALLACE, B. COCHRAN, W. E. NERLICH, and W. G. FRASER. *Circulation (N.Y.)*, 9, 527-532, April, 1954.

For the purposes of this investigation of the effect of the shock which is associated with myocardial infarction, a systolic blood-pressure reading of 80 mm. Hg or below

in previously normotensive patients, or of 100 mm. Hg or below in formerly hypertensive patients, was accepted as evidence of shock, provided the hypotension lasted for an hour or more and was accompanied by signs of peripheral circulatory collapse. Examination of the records of 816 cases of myocardial infarction admitted during 18 months in 1949-51 showed that of these patients 161 (20%) had evidence of shock as defined and 128 of these died, a mortality of 81 per cent.

The later group now described consisted of 134 patients with shock due to recent myocardial infarction who were admitted to the hospital during 18 months in 1951-2. The importance of early treatment of shock is emphasized by the fact that of the 60 patients treated within three hours of onset only 8 died, a mortality of 13 per cent, compared with 56 (76%) of the 74 patients treated after three hours; the over-all mortality in the whole group was 48 per cent.

If routine treatment did not control shock, one or more of the following additional measures were employed. Intravenous infusion (9 cases, control of shock in 2); retrograde arterial infusion of plasma or blood into the radial artery (19 cases, shock controlled in 12); administration of noradrenaline by intravenous drip using a solution of 8 mg. in 1 litre of 5 per cent glucose in water (30 cases, shock controlled in 17); methoxamine, given either intramuscularly in a dose of 20 mg., or 5 mg. slowly intravenously and repeated as necessary (49 cases, shock controlled in 10, no pressor effect obtained in 35); isopropylnoradrenaline, 2 to 3 mg. slowly intravenously, followed by 7.5 or 15 mg. sublingually as required after shock had been overcome, given at intervals of 15 or 30 minutes (26 patients, shock controlled in 7, no pressor effect in 16).

A. Schott

**Endomyocardial Fibrosis.** J. D. BALL, A. W. WILLIAMS, and J. N. P. DAVIES. *Lancet*, 1, 1049-1054, May 22, 1954.

Endomyocardial fibrosis is a common cause of heart failure in Uganda. The authors have observed it only in Africans, in whom it occurs at all ages and with equal sex incidence, and they here report 20 cases studied clinically during the period 1950-3, in all of which post-mortem proof of diagnosis was obtained. The morbid anatomical features of this condition are: normal pericardium and epicardial muscle; endocardial fibrosis in patches or involving nearly the whole of one or both ventricles, several millimetres thick, and pearly white in appearance when not concealed by thrombus; fibrosis extending up to two-thirds of the way into the myocardium; fibrosis of the papillary muscles, thickening and shortening of the chordæ, and resultant incompetence of the mitral and tricuspid valves; and normal coronary arteries and aortic and pulmonary valves. Rarely, bacterial endocarditis is found.

Of the 20 patients, 14 presented with heart failure and signs of incompetence of auriculo-ventricular valves (10 mitral only, 2 tricuspid only, and 2 both mitral and tricuspid); 4 had signs and symptoms of right and left heart failure without other distinguishing features; and the remaining 2 had severe endocardial fibrosis of the

right ventricle with almost complete obliteration of the inflow tract and some tricuspid incompetence—producing a clinical picture and hemodynamic upset not unlike that of constrictive pericarditis. One of these last two patients had a very large hydropericardium. The longest period of symptoms was 7 years and the longest period of observation 20 months. No treatment was beneficial.

K. G. Lowe

**Coarctation of the Pulmonary Artery.** T. SØNDERGAARD. *Dan. med. Bull.*, 1, 46–48, April, 1954.

The author describes 3 cases of cyanotic congenital heart disease in which at operation the pulmonary artery was found to be constricted at its bifurcation. This condition, for which the term "coarctation of the pulmonary artery" is suggested, does not seem to have been previously suspected. In all 3 cases the constriction involved the first part of each branch of the pulmonary artery, and fibrous bands from the ligamentum arteriosum appeared to take part in the constriction.

The author states that coarctation of the pulmonary artery is more serious than that of the aorta, because in the former it is not possible to establish a collateral circulation as in the case of the aorta.

G. S. Crockett

**Further Observations on the Closure of Atrial Septal Defects.** H. B. SHUMACKER, H. KING, and P. R. LURIE. *Circulation (N. Y.)*, 9, 504–510, April, 1954.

In an earlier paper (*Amer. Surg.*, 1953, 138, 404) a new technique for closure of an atrial septal defect was described in which a half-moon-shaped pocket of pericardium was sutured to an incision in the atrial wall, this pocket being then invaginated into the atrial cavity so that its posterior wall could be sutured to the wall of the septal defect. This procedure, although satisfactory in dogs, was not successful in two patients, one of whom died 5 months after operation; at necropsy it was found that the graft had completely disappeared, this being attributed to failure of revascularization of the pericardium. In the present paper the authors describe a modification of this method in which thin, finely-woven nylon fabric was used instead of pericardium. By this technique a large septal defect which had been produced experimentally in 13 dogs was closed. The animals were killed 11 to 189 days after operation and necropsy showed complete closure in 12; in the remaining animal there was a defect 1 mm. in diameter. In 2 dogs the graft was not covered by endothelium 11 and 19 days respectively after operation. No gross thrombi were visible in the atrium or on the graft, and in no instance was there obstruction to the venæ vacæ or coronary sinus.

This operation was performed with success on a boy aged 11 years with an atrial septal defect about 2 cm. in diameter and pulmonary stenosis. The septal defect was closed by invaginating the nylon pocket into the atrium and fixing it to the edge of the septal defect with four interrupted sutures of 4-0 silk and four continuous sutures of the same material between the interrupted sutures. A pulmonary valvotomy was also performed.

The patient was well and free from symptoms 5 months after operation.

R. L. Hurt

**The Role of Auscultation in the Diagnosis of Congenital Heart Disease. A Phonocardiographic Study of Children.** J. D. L. REINHOLD and A. S. NADAS. *Amer. Heart J.*, 47, 405–423, March, 1954.

The auscultatory signs of congenital heart disease were studied in 64 children aged 5 to 15 years. Particular attention was paid to phonocardiograms, which were recorded with stethoscopic and logarithmic microphones from the apex, second and fourth left intercostal spaces, and the second right intercostal space parasternally. A detailed description of the normal phonocardiogram is given, and the authors then recount their findings in cases of aortic stenosis, pulmonary valvular stenosis, ventricular and atrial septal defect, Fallot's tetralogy, and atypical patent ductus arteriosus. Illustrative phonocardiograms and composite diagrams showing the time-relations of the various features with those of the electrocardiogram, apex cardiogram, and carotid pulse tracing are presented, and reference is made to the intensity, distribution, and transmission of the sounds and murmurs described.

The study revealed several rather characteristic phonocardiographic appearances. Among the more valuable points of differential diagnosis was the degree of splitting of the second heart sound, which was greatest with atrial septal defects, normal (0.04 second or less) in cases of ventricular septal defect or patent ductus arteriosus, and negligible in pulmonary and aortic stenosis. In normal children, the second sound is louder on the left than on the right side in the second intercostal space. This relationship is preserved in the majority of cases of atrial septal defect, small ventricular septal defects, and patent ductus arteriosus, but is usually exaggerated in the presence of pulmonary hypertension and reversed in cases of pulmonary stenosis.

The authors state their belief that a search for these phenomena, and others which they describe, by auscultation and their occasional registration by phonocardiography may help in the differential diagnosis of congenital heart disease.

D. Goldman

**Cessation of Circulation in General Hypothermia. III. Technics of Intracardiac Surgery under Direct Vision.** H. SWAN and I. ZEAVIN. *Ann. Surg.*, 139, 385–396, April, 1954.

In experimental animals occlusion of the inflow to the heart for the purposes of intracardiac surgery under direct vision can be maintained safely at normal temperatures for 1½ minutes, and with only slight risk up to 4 minutes. Thereafter the mortality rises sharply, death being due to ventricular fibrillation or cerebral changes.

The use of hypothermia during cardiac operations in man, as pioneered by Bigelow, enables the great veins to be occluded for periods up to 15 minutes, while the danger of ventricular fibrillation can be obviated to some extent by hyperventilation and infusion of potassium salts. The authors have operated on 16 patients under hypothermia, with 2 deaths. The process of cooling,

which is carried out under general anaesthesia in a bath of ice water at 2° to 4° C., may take anything from 15 minutes to 1½ hours. It is noted that fat persons cool more slowly than thin. The operation is carried out when the temperature is between 23° and 26° C.

The major complication is ventricular fibrillation, for the treatment of which the authors have found little value in electrical defibrillation and prefer to perfuse the coronary arteries with potassium chloride solution (1 mEq. per litre) followed by cardiac massage, which is maintained as the patient is warmed. Some hearts recover as the temperature rises; the use of adrenaline is not recommended.

T. Holmes Sellors

**Heparin and Ethyl Biscoumacetate in Prevention of Experimental Venous Thrombosis.** P. JEWELL, T. PILKINGTON, and B. ROBINSON. *Brit. med. J.*, 1, 1013-1016, May 1, 1954.

The efficacy of heparin was compared with that of ethyl biscoumacetate in the prevention of thrombosis following experimentally induced phlebitis in rabbits. The sclerosing agent (0.1 ml. of monoethanolamine oleate) was injected into one of the marginal ear veins in the direction of the blood flow and held in a 4-cm. length of vein for 5 minutes. In this way, extensive thrombosis was produced. One group of 31 rabbits received ethyl biscoumacetate by mouth in 10- to 40-mg. doses twice daily for 3 days before the injection of the sclerosing agent. Administration of the anti-coagulant drug was continued for another 5 days, the animals then being killed. Only 4 rabbits in this group showed extensive thrombosis. A second group of 34 rabbits received heparin as follows: intravenous injection of 500 to 1000 units every 6 hours (11 animals); intramuscular injection of 1000 to 1500 units every 6 hours (10 animals); intramuscular injection of 500 to 1000 units every 4 hours (13 animals). Extensive thrombosis was found in 25 of the 34 veins tested, all three methods of heparin administration being equally unsuccessful in preventing thrombosis. It is considered that since the dosage of ethyl biscoumacetate was only slightly (two to three times) greater than that given to human beings, this difference between the efficacy of the two drugs is important.

[The authors' findings call for critical assessment of the value of these two drugs in the prevention of thrombosis in man.]

G. B. West

**The Incidence and Severity of Atherosclerosis in Estrogen-treated Males, and in Females with a Hypoestrogenic or a Hyperestrogenic State.** A. U. RIVIN and S. P. DIMITROFF. *Circulation (N.Y.)*, 9, 533-539, April, 1954.

In order to explore the possibility that oestrogenic hormones may inhibit the development of atherosclerosis, a study was made of the necropsy records of male patients with carcinoma of the prostate who had been treated with oestrogens and of female patients with carcinoma of the breast—these two groups being considered to have been in a state of hyperoestrogenism—and of surgically castrated females, who had thus been in a state of hypo-oestrogenism.

In all, 153 cases of carcinoma of the prostate were studied. These were divided into cases treated with oestrogens for 3 months or more and control cases in which less than 3 months' oestrogen treatment or none at all had been given. The treated cases were further subdivided according to the dosage employed (30 cases in which a dose of 75 mg. of stilboestrol or more had been given daily, which were compared with 27 controls, a significant difference in severity of atherosclerosis being found only in the coronary arteries. On the other hand the incidence of atherosclerosis in 39 cases of carcinoma of the breast was lower than that in a series of normal subjects reported by other workers while that in 99 female subjects who had undergone bilateral oophorectomy at least one year before death and before the age of 50 was significantly higher.

These results are held to support the theory that ovarian secretions protect against atherosclerosis, this accounting for the sex difference in incidence of the disease.

Peter Harvey

**Hypotensive Action of Reserpin.** A. E. DOYLE and F. H. SMIRK. *Lancet*, 1, 1096-1097, May 29, 1954.

To determine whether reserpine, an alkaloid of *Rauwolfia serpentina*, acts as a placebo or has a hypotensive effect, large doses were given to 20 hypertensive patients. The dose of reserpine usually given is 0.75 to 1.5 mg. daily, but in this investigation it was decided to try the effect of 2 to 3 mg. by mouth three times a day. After these large doses the blood pressure usually fell significantly, more so than after a placebo, the trough occurring 5 hours after the dose. For example, the systolic pressure fell more than 40 mm. Hg in 16 patients and more than 60 mm. Hg in 12, while the diastolic pressure fell more than 25 mm. Hg in 17 patients and more than 45 mm. Hg in 7. The fall in blood pressure began on the first or second day of treatment and often persisted for 24 hours after treatment ceased. There were, however, unpleasant side-effects with these large doses, including flushing, conjunctival injection, nasal blockage, fatigue and sleepiness, depression, shivering, restlessness, and a sensation of heat.

Arthur Wilcox

**An Atlas of Congenital Anomalies of the Heart and Great Vessels.** JESSE E. EDWARDS, THOMAS J. DRY, ROBERT L. PARKER, HOWARD B. BURCHELL, EARL H. WOOD and ARTHUR H. BULBULIAN. Oxford: Blackwells Scientific Publications, 1954. Pp. 202, Figs. 256. 97s.

This atlas, compiled by members of the Mayo Clinic and Mayo Foundation, is in effect a new work although it includes the material contained in the earlier atlas published in 1948. There are numerous additions to the list of malformations discussed and in many instances the results of studies by cardiac catheterization, oximetry, and dye dilution methods are presented. The illustrations are well reproduced and there are numerous colour photographs of models of specimens. The text, which is brief, includes in summary form the important clinical features of the various anomalies described and there is an excellent bibliography. This book is a valuable addition to the literature on congenital heart disease and can be thoroughly recommended.

G. W. Hayward